

First Action Interview Pilot Program Pre-Interview Communication	Application No. 10/594,711	Applicant(s) OKUYAMA ET AL.	
	Examiner AMANDA BARROW	Art Unit 1795	Page 1 of 1

-The MAILING OR NOTIFICATION DATE of this communication appears on the cover sheet with the correspondence address -
THE SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **ONE MONTH OR THIRTY (30) DAYS**, WHICHEVER IS LONGER, FROM THE MAILING OR NOTIFICATION DATE OF THIS COMMUNICATION.

This time period for reply is extendable under 37 CFR 1.136(a) for only ONE additional MONTH.

This communication constitutes notice under 37 CFR 1.136(a)(1)(i).

Applicant must, within the time period for reply, file: (1) A letter requesting not to have a first action interview; (2) A reply under 37 CFR 1.111 waiving the first action interview and First Action Interview Office Action; or (3) An Applicant Initiated Interview Request Form (PTOL-413A) electronically via EFS-Web, accompanied by a proposed amendment or arguments, and schedule the interview within 2 months from the filing of the request. A failure to respond to this communication will be treated as a request not to have an interview. If applicant waives the First Action Interview Office Action, the instant Pre-Interview Communication is deemed the first Office Action on the Merits. The next subsequent Office action may be made final if appropriate. See MPEP 706.07(a).

Disposition of Claims

- 3) ☒ Claim(s) 48, 50-52, 54-65, 67, 69, 71 and 72 is/are pending in the application.
3a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 4) ☐ Claim(s) _____ is/are allowed.
- 5) ☒ Claim(s) 48, 51, 52, 54-65, 67, 69, 71 and 72 is/are rejected.
- 6) ☒ Claim(s) 50 is/are objected to.
- 7) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 8) ☒ The specification is objected to by the Examiner.
- 9) ☒ The drawing(s) filed on 28 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 10) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 11) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

Contact Information

Examiner's Telephone Number: (571)270-7867
Examiner's Typical Work Schedule: 7:30am-5pm EST. Monday-Friday, alternate Fridays off
Supervisor's Name: Dah-Wei Yuan
Supervisor's Telephone Number: 571-272-1295

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/28/06</u> . | 6) <input type="checkbox"/> Other: _____. |

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Notification of Rejection(s) and/or Objection(s)

#	Claim(s)	Reference(s) (if applicable)	Rejection Statutory Basis	Brief Explanation of Rejection
1	48, 52, 67, 69, 72	A, U	102 (b)	A teaches a hydrogen generating stack 12 that decomposes fuel such as methanol (p 16 & 34). A channel introduces MeOH/H ₂ O to the anode 16 and protons and water are transported across the PEM to cathode side 20 of the cell. The protons are reduced along the cathode by externally
2	54-56, 58 and 65	A, U	103 (a)	A teaches that operating the electrolyzer at atm. pressure allows for use of lower current densities without a decrease in efficiency by distributing the same amount of electrocatalyst over a larger membrane surface, resulting in a higher voltage efficiency of
3	71	A, U, B	102 (b)	A teaches that a sodium sulfate electrolyzer can be used wherein sodium sulfate/sulfuric acid is supplied at the anode as fuel. B gives evidence that in such an electrolysis cell, a hydrogen peroxide solution migrates across the membrane (p 5). Thus, in this
4	59-64	A, C, D, E	103 (a)	A fails to teach that the voltage/evolution volume of H ₂ is adjusted by parameters claimed; however, C teaches that the amount of hydrogen can be varied depending on the power provided (paragraph 35), D teaches that the volume of H ₂ varies depending on the
5	51, 56, 57		112, paragraph 1st	Claims 51 and 57 fail to fulfill the enablement requirement of 112, 1st paragraph. It is not clear to the Examiner how the hydrogen generating device can withdraw electric energy to outside as this goes against all standard operating parameters of a hydrogen

Expanded Discussion/Commentary

6		Claim 50 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 50 is allowable because the prior art does not teach that the hydrogen generating device is an open circuit having neither means for withdrawing electric energy to outside from a hydrogen generating cell constituting the hydrogen generating device, nor means for providing electric energy from outside to the hydrogen generating cell.	
1		transported electrons to form hydrogen, thus, the protons supplied act as the "oxidizing agent" which is defined as a species that gains electrons as evidenced by U. Figure 1 shows "hydrogen supply means" (pipe labeled "generated H2") and hydrogen storing means 14. A teaches that water transported across the PEM is in vapor/gas form and thus the water ("oxidizing agent") is an O2 containing gas (claim 69). The MEA membrane is an ionic conductive membrane formed of perfluorocarbon sulfonic acid (p 19) (claim 72).	
2		the electrolyzer (p 8). It is well known that current and voltage are related through Ohm's law ($V=IR$). Therefore, it would have been obvious to modify the current density (and thus the voltage) by modifying the amount of electro-catalyst and area of membrane surface in order to arrive at the desired efficiency of the electrolyzer. The discovery of an optimum value of a known result effective variable, without producing any new or unexpected results, is within the ambit of a person of ordinary skill in the art. See <i>In re Boesch</i> , 205 USPQ 215.	
3		case, the "oxidizing agent" supplied to the cathode in the electrolyzer of A is a hydrogen peroxide solution	
4		volume/concentration of the reactants (paragraph 35), and E teaches that the voltage of the cell is varied according to the concentration (and thus the volume as the two are related) of the reactants (column 5, lines 19-36). Therefore, it would have been obvious to modify these parameters in the hydrogen generating device of A in order to achieve the desired voltage/evolution of H2 in order to satisfy the systems needs (i.e., the amount of hydrogen required by the fuel cell).	
5		generating devices. If electricity is being withdrawn, it appears as though the "H2 generating device" is actually functioning as a fuel cell as typically devices of this sort, often deemed electrolysis cells, require energy to operate and do not produce energy. Appropriate correction or explanation is required.	
DATE: 6/29/2010		/AMANDA BARROW/ Examiner, Art Unit 1795	/Dah-Wei D. Yuan/ Supervisory Patent Examiner, Art Unit 1795